

Serial No. 10/632,546, Filed 5/19/04

IN THE SPECIFICATION:

Please amend the Specification as follows:

[3] One mechanical leaf spring arrangement ~~use~~ used in passenger car applications is shown in Figure 1 in which the spring is arranged laterally. The system 10 includes a frame 12 that may be constructed from one or more structural members and/or brackets. Upper control arms 14 are pivotally supported by first pivotal connections 16 on the frame 12. Knuckles 18 are supported by a connection 20 on an end of the upper control arm 14. The ~~knuckle~~ knuckles 18 includes a spindle 22 for rotationally supporting a wheel end. Lower control arms 24 are spaced apart from the upper control arms 14. The lower control arms 24 are connected to the frame 12 by connections 26. A second pivotal connection 28 on each of the lower control ~~arm~~ arms 24 supports the lower portion of the knuckle 18. A lateral leaf spring 30 is arranged between the upper 14 and lower 24 control arms. The lateral leaf spring 30 has opposing ends 32 that are connected to portions of the lower control arms 24 by links 34. Rubber pivots 35 are arranged between the frame 12 and the lateral leaf springs 30 to dampen the movement of the suspension system 10. However, the configuration shown in Figure 1 still may provide harsh ride quality.

[12] Figure 3C is a schematic view of the present invention receiving an input from the roadway on one side of the suspension.

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[14] The system 10 includes upper control arms 14 that have portions 46 extending from the first pivotal connection 16 away from the connection 20. Air springs 36 may be arranged between the portions 46 and the frame 12. It is to be understood that the air springs 36 may also be arranged in other locations. For example, the air springs 36 may be arranged between the leaf spring 30 and the frame 12. The air springs 36 receive air from a pressurized air source 40. The pressure to the air springs 36 is metered by valves 42 that are controlled by a controller 44 that may also be connected to the pressurized air source 40. The pressurized air system may also provide load leveling and other desired suspension control features. In the preferred embodiment, each air spring 36 has its own independently ~~control~~ controlled valve 42 so that different pressures may be maintained in the air springs 36 for maintaining lateral stability such as during dock loading conditions. Devices used for detecting vehicle stability during travel or loading conditions may also be connected to the controller 44, but are not shown.

[15] A jounced condition is shown in Figure 3A. The opposing ends 32 of the leaf spring 30 deflect upward, and the air springs ~~30~~ 36 dampen the movement of the opposing ends 32 of the leaf spring 30 through the upper control arms 14. A roll condition is shown in Figure 3B. One end 32 is deflected upward while another end 32 is deflected downward during a turning maneuver. Since independent air springs 36 are used, the ends of leaf spring 30 may be damped independently through the upper control arms 14. The lateral leaf spring 30 may receive an input from the vehicle roadway on only one end, as shown in Figure 3C. One of the air springs 36 may provide independent damping to the deflected end of the leaf spring 30 through the upper control arms 14.